Exposure to environmental tobacco smoke in childhood is associated to lung function in smoking adults.

Omland Ø[1,2], Malling T[1], Schlünssen V[2], Sigsgaard T[2], Skadhauge L[3], Sherson D[4], Bælum J[4], Thomsen G[3].
[1]Dept. of Occupational Medicine, Aalborg, Århus University Hospital, [2]Institute of Public Health, University of Århus, [3]Dept of Occupational Medicine, Hospital of South West Denmark, Esbjerg, [4] Dept. of Occupational and Environmental Medicine, Odense University Hospital, all Denmark.

Introduction

Post-natal environmental tobacco smoke (ETS) exposure may lead to decrease in lung function and respiratory morbidity later in life although few studies have focused on adults .
We have analysed for associations between exposure to ETS in childhood and lung function in young adults. FEV_1 and FVC were measured according to ERS and ATS recommendation.

Methods

In a Danish cross-sectional study of asthma in subjects aged 20-44 years (ERCHS protocol) between 2003 and 2006 690 random selected subjects were eligible for analysis. Information was obtained of the participants exposure to ETS in childhood, cumulative smoking history and current exposure to ETS based on questionnaire, and we measured FEV1 and FVC according to ERS and ATS recommendation and by means of a Microloop spirometer.

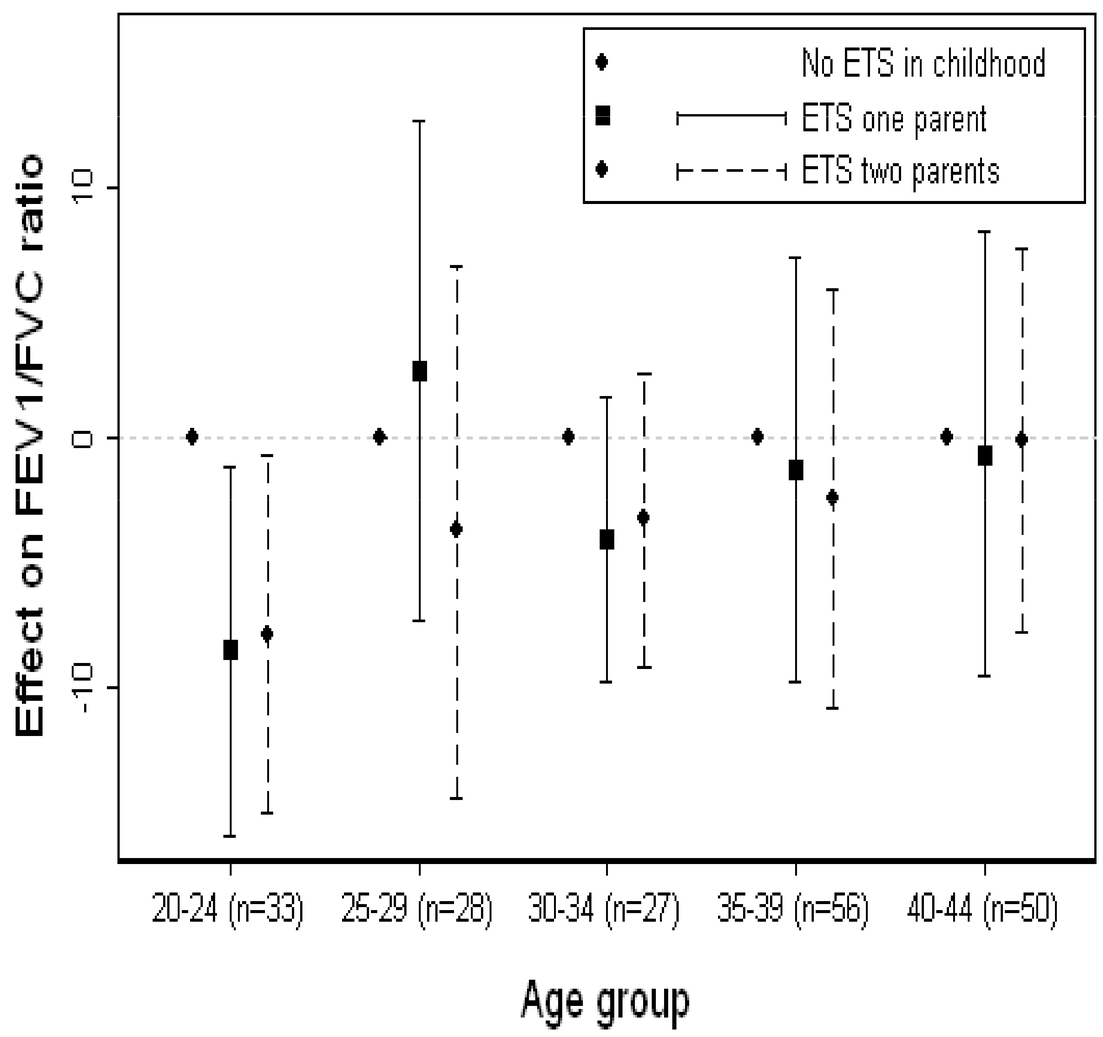
Conclusions

Young adults have more obstructive pattern in lung function when exposed to ETS as a child especially in current smokers

Results

No ETS was reported in 130 subjects while 245 and 315 subjects reported one or two parents smoking at home respectively. Mean FEV1/FVC ratio was 80.2 (95% CI 79.5-80.5) ETS in childhood had a negative effect on the FEV1/FVC ratio (p=0.025 and p=0.001 by one or two parents respectively). When stratifying for smoking habits the result was only significant among the 194 current smokers. Figure 1 shows relative difference in FEV1/FVC ratio in smoking adults by no. of parents smoking at home in childhood stratified by age group, adjusted for gender, pach-year, current exposure to ETS, study centre, and height[2].

Figure 1



Aarhus University Hospital
NORTH DENMARK REGION

Atopic status affects association between BHR and asthma symptoms among females

Tine H Malling[1], Torben Sigsgaard[2], Vivi Schlünssen[2], Ole Find Pedersen[2], Øyvind Omland[1,2], and the RAV group

[1]Department of Occupational Medicine, Aalborg Hospital, Aalborg, Denmark, and [2]Public Health, Environmental and Occupational Medicine, University of Aarhus, Aarhus, Denmark

Introduction

Bronchial hyperresponsiveness (BHR) and atopy are conditions associated to asthma. In cross-sectional studies in the general population, the presence of chronic diseases like asthma will appear as a continuum between healthy subjects and subjects having well-defined diseases. To avoid dichotomising, a condition perceived by those who suffer from it as a single condition characterized by symptoms, the ECRHS-questionnaire attempts to outline continuous variables reflecting the entire asthma spectrum (1). Asthma shows distinct gender differences with a higher prevalence in boys than in girls before puberty and a higher prevalence in females than in males in adulthood (2). Our objective was to analyse if atopic status and gender affected the associations between asthma symptoms and the extent of BHR.

Methods

In a Danish cross-sectional study of asthma among subjects aged 20-44 years (ERCHS protocol) 933 subjects were eligible for analysis. Asthma symptoms were defined by an 8 items asthma score (1). Extent of BHR was defined as log-dose-slope (LDS) for FEV1 in a methacholine-challenge

LDS=log10(((FEV1 start - FEV1 end))*100/(FEV1 start *dose))+2) + 1

Atopic status was defined as at least 1 of 13 positive skin prick test (mean ≥ 3mm) for common inhalant allergens.

References

(1) Pekkanen J, Sunyer J, Anto JM, Burney P. Operational definitions of asthma in studies on its aetiology. Eur Respir J 2005 July;26(1):28-35.

(2) Postma DS. Gender differences in asthma development and progression. Gend Med 2007;4 Suppl B:S133-S146

Results

Atopy was present among 181 (36%) females and 192 (45 %) males (χ-test, p=0.008). More females reported asthma symptoms (χ-test, p=0.02), and LDS was higher among females (t-test, p<0.001). LDS was higher among atopic subjects compared with the non-atopic (t-test, p<0.001).

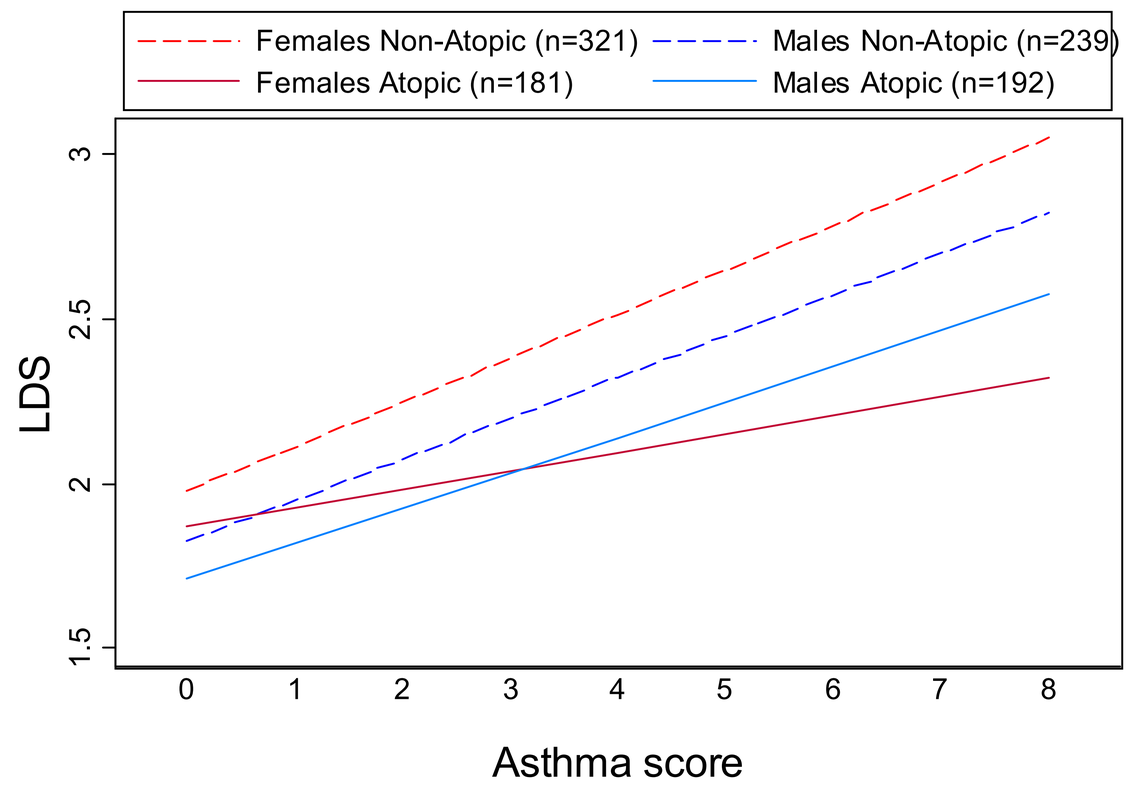


Figure 1 Associations between LDS and asthma score by gender and atopic status. Significant interaction between atopy and asthma score was seen in females, p<0.001.

Conclusions

LDS for FEV_1 increases with the number of asthma symptoms, but in non-atopic females this association is weaker than in atopic females and in men. It remains unclear whether this is due to higher perception of asthma symptoms among non-atopic females.

Risikofaktorer for Astma hos Voksne

Aarhus University Hospital

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